DESCRIPTION OF A NEW SPECIES OF DOLABELLA, FROM THE GULF OF CALIFORNIA, WITH REMARKS ON OTHER RARE OR LITTLE-KNOWN SPECIES FROM THE SAME REGION.

BY ROBERT E. C. STEARNS.

THE forms referred to herein are part of a collection made in 1876, by Mr. William J. Fisher, of San Francisco, and kindly presented to me by the collector. In connection with the previous abundant material in my cabinet from Lower California and the shores and waters of the Gulf of California, Mr. Fisher's contribution adds much to our knowledge of the forms inhabiting the above province, their distribution and variation. I propose to publish additional papers in continuation of this, with notes and comments relating to these points.

Dolabella Californica, Stearns. (New Species.)

This form appears to have escaped detection until collected by Mr. Fisher, who found it living in Mulege Bay, Gulf of California; it prefers "dark places in pools left by the tide."

Though several specimens of the animal were procured, I was unable to obtain a specimen for investigation. Mr. Fisher, who made no drawings at the time of collecting, informs me that the animal is of the same general form as authors have given for *Aplysia*;[1] the color of the above species being a dark-brown, and the surface covered with warty papillæ. As to color, this species probably varies somewhat as do the individuals of others.

The species heretofore made known are principally inhabitants of the Indo-Pacific province, and the Mediterranean region is also credited with a representation of this group.

The figures, Plate VII, 1 and 2, of natural size, which I have carefully drawn from the largest of the two shells in my collections, resemble in outline, somewhat, the shells of *D. Rumphii* of Cuvier, = *D. scapula*, Martyn. The nuclear callosities vary more or less in different specimens.

Murex (Ocinebra) erinaceoides, Val. (= ? M. Californicus Hds)

In the late Dr. Carpenter's Reports to the British Association, reference is made to the foregoing species (*Muricidea erinaceoides*) by name only. In his Mazatlan Catalogue, however, he

[1] See Woodward's Manual, 2d ed., p. 321.

has described a "var. indentata," of a form which he presumes to be Valenciennes, species, and suggests a comparison with Kiener's *Murex alveatus*. In the Smithsonian Check List (June, 1860), he included Kiener's name, but omitted that of Valenciennes. As neither Kiener's nor Reeve's monographs are accessible, I have only been able to compare with Chenu's figure 583, as presented in the latter's Manual, Vol. I., p. 137, which is quite a different form from that herein considered, and which I have no doubt is the shell described by Valenciennes, for his name is so eminently appropriate, that if there is any question or confusion of names, his should be retained. The shell referred to has frequently been under my notice, and its determination has sorely puzzled others as well as myself. The specimen before me at this moment, which is only about half the size of some in my collection, is exceedingly suggestive of the European *erinaceus*, and the characters and range of variation in the two species are very much alike, though large adults vary more than do the smaller individuals. The West American form, when adult, is more triangular, and exhibits a general variation in the direction of *Pteronotus*.

The genera *Muricidea* and *Ocinebra*, as defined in Adams's Genera, when considered in the light of some of the species included by said authors in each of the two groups, will be found on comparison to approximate so closely as to create a doubt as to, in which of them, certain forms should be placed. I have grouped the form under review with *Ocinebra* because the Adams' have so placed its European analogue *erinaceus*, and for the further and better reason that most of the small muricoids of this part of the West American coast fall naturally into said genus. I am under the impression that some of the many *Ocinebræ* of the southerly part of the Californian and Vancouver province will prove to be northern varieties of this species. La Paz, Gulf of California, rare, Fisher; but, judging from the number of beach shells which I have seen, it must be abundant at some point in the Gulf or on the mainland or islands along the western or ocean side of the peninsula.

I append the following note from Mr. Tryon, who has kindly traced the synonymy. It is not unlikely that this form may prove to be a *Cerastoma*, as he suggests.

[Reference to the original description and distinctive characters of *Murex erinaceoides*, Val. (Recueil d'Observations, etc. II.,

302, 1833), indicates that Mr. Stearns' identification of this species is correct. It has been since described by Mr. Hinds in Zool. Proc. London, 128, 1843, under the name of *Murex Californicus* Hinds; and excellent colored figures are given in Voy. Sulphur., t. 3, f. 9, 10. It is also figured in Reeve, Conch. Icon. sp. 144, under the latter name. Hinds describes the shell as having six varices, but his figures only show three; Reeve's description is correct in mentioning three varices alternating with nodes or ribs. The specimen sent by Mr. Stearns, with his paper, has but three varices. I think that Mr. Hinds has erred in including the three internodes as varices in his description. The species cannot be placed in either *Ocinebra* or *Muricidea*. Until the operculum shall be examined, it will be impossible to group it with certainty; if the operculum is muricoid, it is a *Chicoreus*, Montf.; if purpuroid, it is a *Cerastoma*, Conr. Geographical considerations lead me to surmise that it will prove to be the latter. Broderip (Zool. Proc. 175, 1832) described *Murex lugubris*, a species having five or six varices, and much resembling *M. erinaceus*. It occurs from Puerto Portrero, Central America, to Magdalena Bay, and is figured by Sowerby, Conch. Illust. f. 26, and by Reeve, Iconica, sp. 143. If this should prove to be the same as Valenciennes's species, the name would take precedence, having a year's priority.

G. W. T., Jr.]

Macron Æthiops, Reeve = *M. Kellettii*, Hinds.

Numerous fine specimens were found alive on mud flats in San Quentin bay, which indisputably connect the foregoing.

Reeve's species was probably described from a large specimen, in which the entire surface of the whorls was broadly and more or less deeply channeled or grooved, as in specimens in my collection, which measure 2.9 inches in length by 1.92 inch in width; from this, younger specimens, as small as 1 inch in length by .58 inch in width (the outer lip thin at this age), show the same characters.

In *Kellettii*, the type, as figured in Chenu's Manuel, measures 1.80 inch in length by 1.10 inch in width, and exhibits only three of these channels near the base of the body whorl. Mr. Fisher's specimens prove that the grooving is an uncertain character. The number of individuals collected by him was fortunately ample enough to settle all doubts, and prove that the two forms as

above should be united under one specific name; as Mr. Reeve's appears to be the first in order of time, it must be adopted.

All of these shells, when alive or fresh, are covered with a black or nearly black epidermis, which is apt to flake or peel off when very dry. (The epidermis has the same characters in the rare *Mitra Belcheri*, in common with other West American related forms, and we may presume lives in *mud* stations.)

The varieties of *Macron* may be described as follow:—

I. Length 2.02, breadth 1.28 inches; channelled throughout; more conspicuously on lower part of body whorl than elsewhere. Plate VII., fig 3.

II. Length 1, breadth .57 inch; outer lip immature; channelled throughout.

III. Length 1.76, breadth 1.10 inch; channels obsolete or nearly so on upper part of body whorl. Plate VII., fig. 4.

IV. Length 1.22, breadth .82 inch; channels strongly marked below, fainter above and on the greater part of body whorl; on upper part of same barely perceptible.

V. Length 1.58, breadth 1 inch; three grooves on lower part of body whorls; otherwise smooth; typical of Hinds' form. Plate VII., fig. 5.

Although the other West American species, described by A. Adams, and named *M. lividus*, Plate VII., 6, habitat San Diego, on the ocean coast in the State of California, is a smaller form, with a smooth, unchannelled surface, suture somewhat deeply impressed; seldom attaining the length of one inch (averaging only .77), and rather slender than robust, and at present, I believe, universally regarded as a "good species," nevertheless I am of the opinion that it will prove to be a variety of the larger gulf forms, dwarfed by reason of its extreme northerly and extra limital position.

Mr. Reeve's form is also found at "Cedros" or Cerros Island, off the coast on the ocean side of the peninsula, and the range of forms herein referred to, it will be noted, extends from San Diego, California, in the north, around (probably at many points) on both coasts, the inner and outer shores of Lower California, and on the adjacent islands.

Numerous specimens in my collection and that of W. J. Fisher.

Cypræa (Luponia) controversa, Gray.

In Sowerby's monograph of Cypræa, in his Conch. Illustr., species 30, figure 136, no habitat given, reference is made to what I have always regarded as applying to the form under consideration. The only comment in the text as above is: "30—C. controversa, *Gray*, Zool. Journ., t. 7 and 12, p. 7. *Obs.* This may prove to be only a variety of C. Isabella."

While its general coloration would lead to its being grouped with *C. isabella* of the Indo-Pacific and *C. lurida* of the Mediterranean regions, it differs more from the former than it does from the latter named species. While it is a more ventricose form than *C. isabella*, in this respect being nearer to *C. lurida*, the edges of the lips are not as finely and closely crenulated as in *isabella*, nor as coarsely as in *lurida*.

As the specimens which first attracted the attention of Californian collectors and naturalists were beach shells, they were regarded as ballast specimens of *isabella* from some Indo-Pacific port, thrown over from some ship, or accidentally mixed in with gulf shells by sailors, and were not carefully examined or considered. Their frequent reception from the gulf has led me to look into the matter, with the result as above stated.

Mr. Fisher collected several fresh living specimens at the Maria Madre, and at San Juanico Islands of the Tres Marias group, and the species should be added to the faunal list of the Mazatlan province.

Onchidella Carpenteri, Stearns = Onchidium Carpenteri, W. G. Binney.

The form referred to herein, which I presume to be the same imperfectly described from alcoholic specimens by Mr. Binney in the Proceedings of the Philadelphia Academy of Natural Sciences, 1860, page 154, is an *Onchidella*, as said genus is defined by Woodward,[1] the generic description and type (*O. Typhæ*, Buchanan) being considered, together with numerous specimens collected by Mr. Fisher at various places in the gulf of California.

Although Mr. Fisher's specimens are somewhat contracted and distorted by alcohol, they are probably in better condition than were those examined by Mr. Binney, and I am therefore able to add the following to that author's descriptive remarks:—

Body oblong ovate, about one-third longer than wide; convex

[1] Recent and Fossil Shells, 2d ed., 299.

or rounded above, flat on the under side; anterior and posterior ends equally rounded. Dorsum formed by the mantle, and entirely covering the back, which is of a smoky brown color, coriaceous and quite thick at the edges, as seen from the under side, which latter is of a dingy yellowish color. Surface of dorsum closely covered with rough wart-like papillæ, some larger than others; the largest placed so as to present somewhat the aspect of regularity, the interspaces being filled with the smaller. Creeping disk or belly elongated, nearly as long as the animal, and its width about one-third of the entire width, as seen from below.

Respiratory orifice on the left side, between the edge of the creeping disk and the mantle, at a point about two-fifths of the total length, from the posterior end. Anal outlet on the right side, very near the posterior extremity of, and just above the edge of, the creeping disk.

The eye peduncles rather short, and these, together with the buccal appendages, are obscured through the contraction caused by the alcohol.

The creeping disk, being comparatively soft, is much contracted by the same cause.

[Abundant, attached to the under side of stones, at low tide. Sometimes overlapping each other.—W. J. Fisher.]

Habitat. Gulf of California, in San Francisquita Bay, Los Animas Bay, and Angeles Bay.

The above was written, and Plate VII., figure 7, drawn (twice the actual size) from an alcoholic specimen in my collection. It shows the ventral; *o*, oral orifice; *a*, anal orifice; *r*, respiratory orifice; *d*, creeping disk.

Specimens are also contained in the collections of Mr. Fisher, Museum of University of California.

Figure 8, Plate VII., restored as suggested by Mr. Fisher, to whom the drawing was submitted; he writes: "Your figure No. 2, (8) has the exact shape of the species."

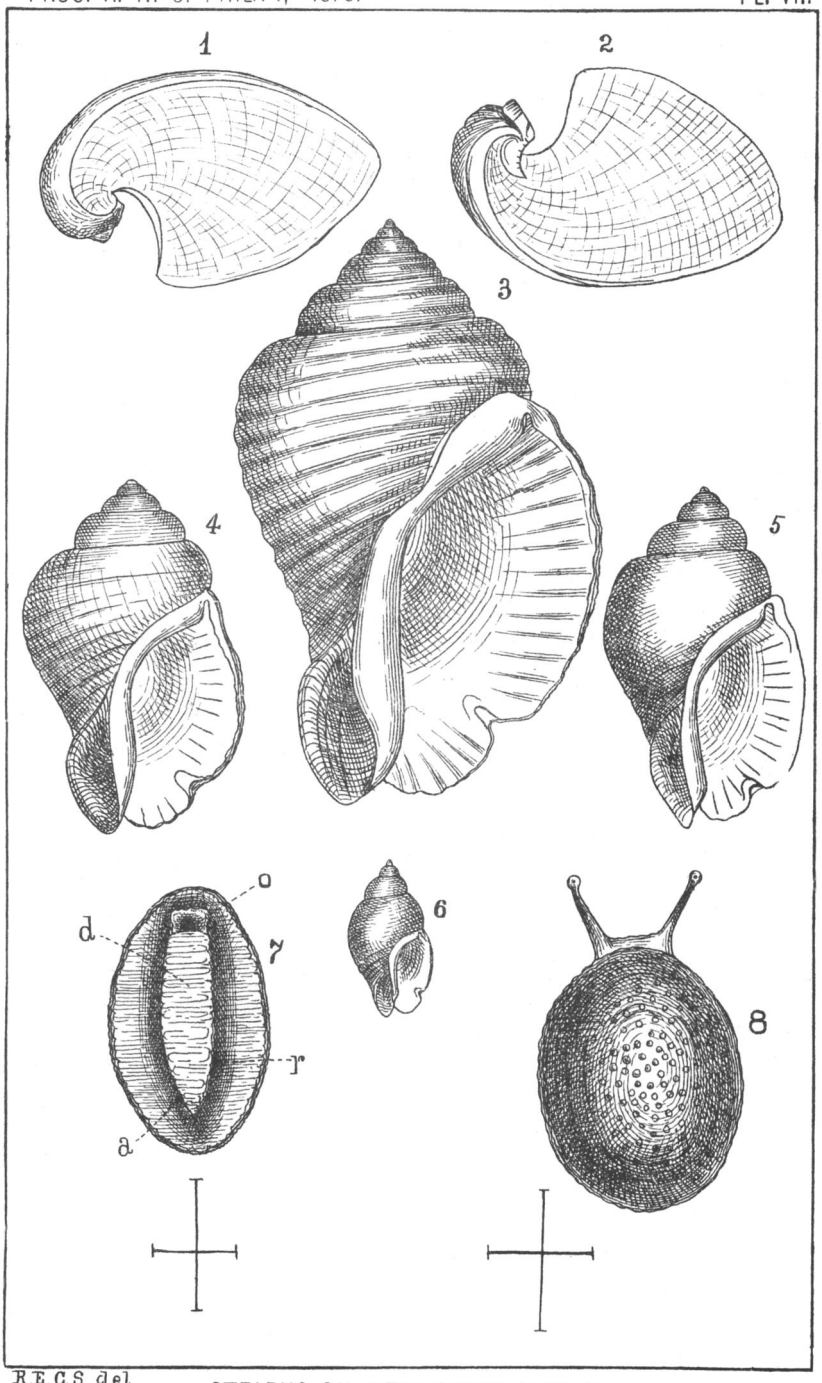
Judging by figures 2 and 2*a*, of *Onchidella granulosa*, Lesson, in Adams' Genera of Recent Mollusca, Pl. LXXXI., it somewhat resembles that species, except in color.

Mr. F. W. Hutton, in his "Catalogue of the Marine Mollusca of New Zealand," includes a species *Onchidella nigricans*, Quoy, color "uniform black" . . . . "common on rocks between

tide marks," having the same habit in this respect as *O Carpenteri.*

The Adams say, "The species of this genus live on aquatic plants, in ditches and damp places." According to Woodward, the California species belongs in a different genus from that in which I have placed it, for he says: "Those which frequent sea-shores have been separated under the name of *Peronia*, Bl. (*Onchis*, Fer.)." The type of this last genus *P. tongana*, Quoy, is too conspicuously different to admit of this; the balance of characters being decidedly in favor of the group first named herein, and to which I regard it as more nearly related.

The dorsal eyes, detected by Prof. Semper in certain forms of *Onchidiæ*, and which he has so carefully illustrated and described, I have not been able as yet to discover in any of the specimens collected by Mr. Fisher.



R.E.C.S. del.

STEARNS ON WEST COAST SHELLS.